Energy

IV._____ transfer occurs when energy is lost to surrounding environment.

Energy

A. Fact about heat

1. Heat moves from _____ to _____.
    a. Hot objects will cool.
    b. Cold objects will heat up.

Energy

Energy

- If a cup of coffee and a ice water were left on the table in this room what would happen to them? Why?

Energy

- If a cup of coffee and a ice water were left on the table in this room what would happen to them? Why?
- The cup of coffee will _____

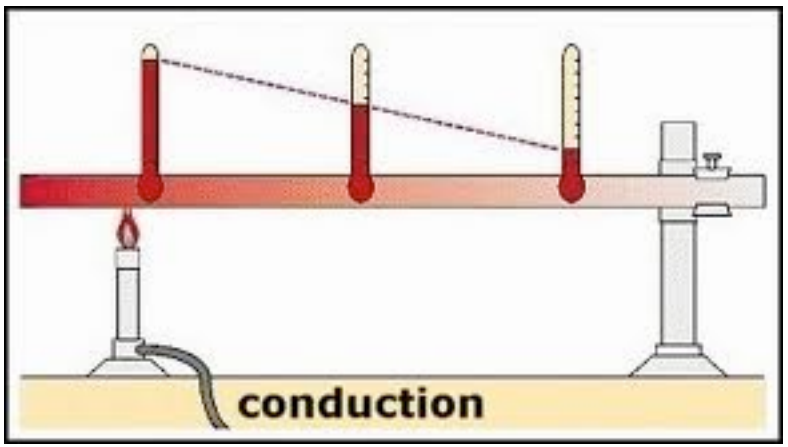
_____

Energy

- If a cup of coffee and a ice water were left on the table in this room what would happen to them? Why?
- The cup of coffee will _____ _____
- The ice will _____ _____

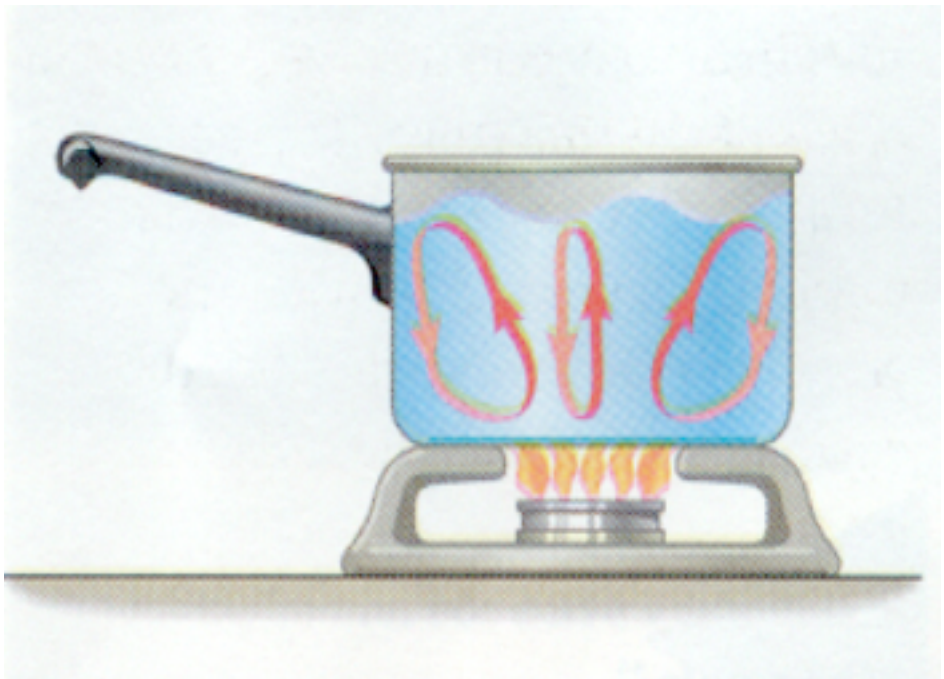
CONDUCTION

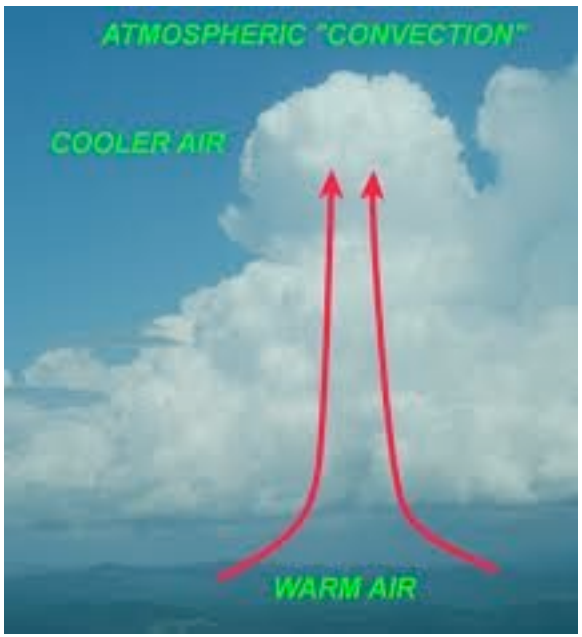
- 1. Thermal conduction – the transfer of energy as heat **through** a material
  - Occurs when objects that are in _____ _____ are at unequal temperatures



CONVECTION

2. Convection - movement of matter due to differences in _____ caused by temperature variation.
   a. Only possible in _____ and _____

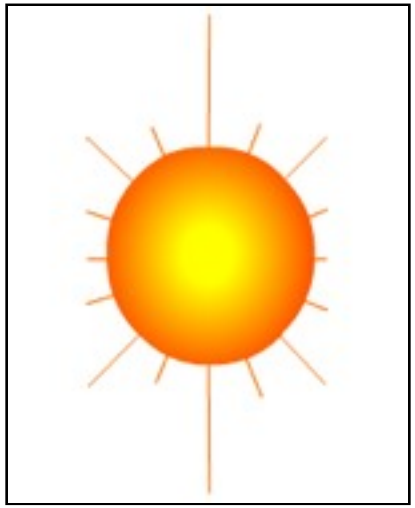




RADIATION

3. Radiation - energy that is transferred as electromagnetic waves such as visible light and infrared waves
   a. Does not require _____ _____ and no matter is moved

How does heat energy get from the Sun to the Earth?



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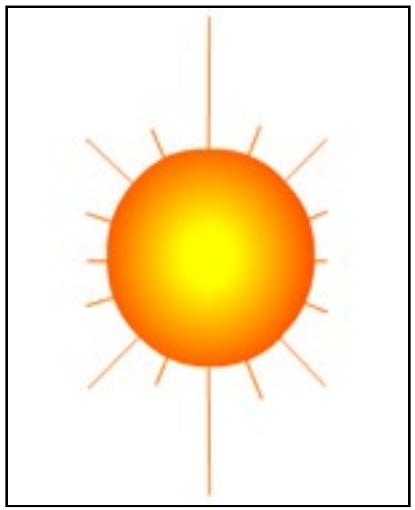

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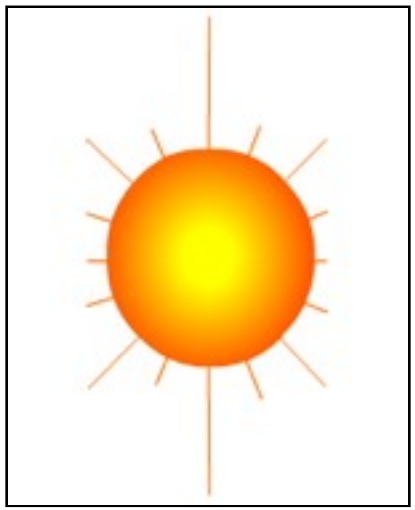
How does heat energy get from the Sun to the Earth?



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There are no particles between the Sun and the Earth so it CANNOT travel by conduction or by convection.

How does heat energy get from the Sun to the Earth?

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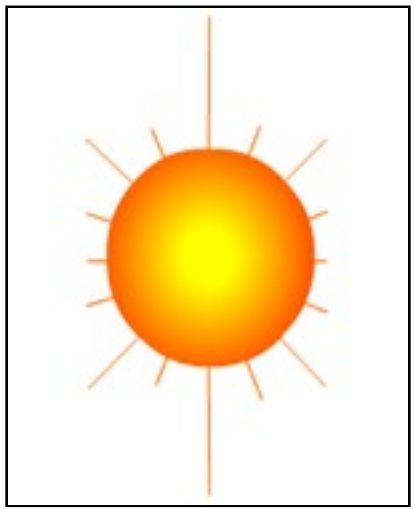

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RADIATION

Radiation

Radiation

Radiation travels in straight lines
True/False
Radiation can travel through a vacuum
True/False
Radiation requires particles to travel
True/False
Radiation travels at the speed of light
True/False

Radiation

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Radiation

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True/~~False~~
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Radiation requires particles to travel
~~True~~/False
Radiation travels at the speed of light
True/False

Radiation

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True/~~False~~

Radiation can travel through a vacuum

True/~~False~~

Radiation requires particles to travel

~~True~~/False

Radiation travels at the speed of light

True/~~False~~

Convection questions

Why does hot air rise and cold air sink?

Convection questions

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Cool air is more dense than warm air, so the cool air 'falls through' the warm air.

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Why are boilers placed beneath hot water tanks in people's homes?

Convection questions

Why does hot air rise and cold air sink?

Cool air is more dense than warm air, so the cool air 'falls through' the warm air.

Why are boilers placed beneath hot water tanks in people's homes?

Hot water rises.
So when the boiler heats the water, and the hot water rises, the water tank is filled with hot water.

Radiation questions

Why are houses painted white in hot countries?

Why are shiny foil blankets wrapped around marathon runners at the end of a race?

Radiation questions

Why are houses painted white in hot countries?

White reflects heat radiation and keeps the house cooler.

Why are shiny foil blankets wrapped around marathon runners at the end of a race?

Radiation questions

Why are houses painted white in hot countries?

White reflects heat radiation and keeps the house cooler.

Why are shiny foil blankets wrapped around marathon runners at the end of a race?

The shiny metal reflects the heat radiation from the runner back in, this stops the runner getting cold.

1. Which of the following is not a method of heat transfer?

A. Radiation

B. Insulation

C. Conduction

D. Convection

1. Which of the following is not a method of heat transfer?

A. Radiation

B. Insulation

C. Conduction

D. Convection

2. In which of the following are the particles closest together?

A. Solid

B. Liquid

C. Gas

D. Fluid

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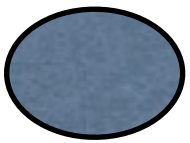


A. Solid

B. Liquid

C. Gas

D. Fluid

3. How does heat energy reach the Earth from the Sun?

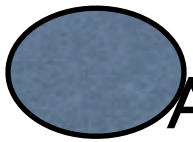
A. Radiation

B. Conduction

C. Convection

D. Insulation

3. How does heat energy reach the Earth from the Sun?



A. Radiation

B. Conduction

C. Convection

D. Insulation

4. Which is the best surface for reflecting heat radiation?

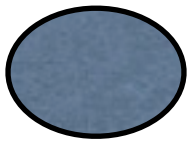
A. Shiny white

B. Dull white

C. Shiny black

D. Dull black

4. Which is the best surface for reflecting heat radiation?



A. Shiny white

B. Dull white

C. Shiny black

D. Dull black

5. Which is the best surface for absorbing heat radiation?

A. Shiny white

B. Dull white

C. Shiny black

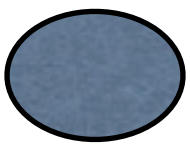
D. Dull black

5. Which is the best surface for absorbing heat radiation?

A. Shiny white

B. Dull white

C. Shiny black


D. Dull black